

**COMMONWEALTH OF VIRGINIA**  
**Department of Environmental Quality**  
**Southwest Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

Wolf Hills Energy, LLC  
14555 Industrial Park Road, Washington County, Virginia  
Permit No. SWRO11348

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. The facility is also subject to the acid rain regulations at 9 VAC 5-80-360 through 9 VAC 5-80-680. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Wolf Hills Energy, LLC has applied for renewal of the Title V Operating Permit for its peaking power plant in Washington County, Virginia. The Department has reviewed the application and prepared an Article 3 Federal Operating Permit.

Engineer/Permit Contact: \_\_\_\_\_  
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Date: \_\_\_\_\_

Regional Director: \_\_\_\_\_  
Dallas R. Sizemore

Date: \_\_\_\_\_

## **FACILITY INFORMATION**

### Permittee

Wolf Hills Energy, LLC  
1044 North 115<sup>th</sup> Street, Suite 400  
Omaha, Nebraska 68154-4446

### Facility Location

Wolf Hills Energy, LLC  
14555 Industrial Park Road  
P.O Box 16549  
Bristol, Virginia 24202

Facility ID No. 51-191-00180

## **SOURCE DESCRIPTION**

NAICS Code: 221112 – Fossil Fuel Electric Power Generation

Wolf Hills Energy is a peaking electric power generation facility. It consists of five Pratt & Whitney FT8 Twin Pac simple cycle gas turbine generator sets, with each generator set powered by two gas turbines using natural gas exclusively as a fuel. Each Twin Pac has a maximum heat input of 520.5 MMBtu/hr, with a rated base load of 57.3 MW output. A natural gas-fired heater with a maximum heat input of 11.9 MMBtu/hr heat input was removed from service as of December 9, 2008.

Air emissions from the combustion turbines include particulate matter (PM, includes PM-10), volatile organic compounds (VOC), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), and trace amounts of hazardous air pollutants (HAP).

The facility is considered a Title V major source because potential emissions of NO<sub>x</sub> and CO are above the major source threshold. This facility is located in an attainment area for all pollutants, and is a PSD minor source. The facility is currently permitted under a state major new source review (NSR) permit issued on August 27, 2001, and amended on September 18, 2006, and December 9, 2008, and a Phase II Acid Rain Permit effective from January 1, 2006 through December 31, 2010. The expiration date of the initial Title V operating permit was January 1, 2009.

## **COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, was conducted on June 27, 2007. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

## EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant(s) Controlled
WH01	1a	Pratt & Whitney FT8 Twin Pac #1a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-1 CD-11	NO <sub>x</sub> CO
WH02	1b	Pratt & Whitney FT8 Twin Pac #1b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-2 CD-12	NO <sub>x</sub> CO
WH03	2a	Pratt & Whitney FT8 Twin Pac #2a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-3 CD-13	NO <sub>x</sub> CO
WH04	2b	Pratt & Whitney FT8 Twin Pac #2b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-4 CD-14	NO <sub>x</sub> CO
WH05	3a	Pratt & Whitney FT8 Twin Pac #3a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-5 CD-15	NO <sub>x</sub> CO
WH06	3b	Pratt & Whitney FT8 Twin Pac #3b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-6 CD-16	NO <sub>x</sub> CO
WH07	4a	Pratt & Whitney FT8 Twin Pac #4a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-7 CD-17	NO <sub>x</sub> CO
WH08	4b	Pratt & Whitney FT8 Twin Pac #4b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-8 CD-18	NO <sub>x</sub> CO
WH09	5a	Pratt & Whitney FT8 Twin Pac #4a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-9 CD-19	NO <sub>x</sub> CO
WH10	5b	Pratt & Whitney FT8 Twin Pac #4b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-10 CD-20	NO <sub>x</sub> CO

## EMISSIONS INVENTORY

A copy of the 2007 Emission Statement is attached. Emissions are summarized in the following table:

2007 Actual Emissions	Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO <sub>2</sub>	PM-10	NO <sub>x</sub>
Total	1.4	10.0	0.7	7.8	102.8

## EMISSION UNIT APPLICABLE REQUIREMENTS - Combustion Turbines (WH01 – WH10) and Natural Gas-Fired Heater (WH-HTR)

### Limitations

The following limitations are applicable requirements from the state major NSR permit issued on August 27, 2001, and amended on September 18, 2006, and December 9, 2008. Condition numbers are from the NSR permit. The combustion turbines are subject to the New Source Performance Standards of 40 CFR Part 60 Subpart GG – Standards of Performance for Stationary Gas Turbines (NSPS Subpart GG). Applicable facility limitations from the subpart have been incorporated into the requirements from the state major NSR permit.

Condition 3: The permittee shall not operate the natural gas-fired heater without prior written approval from DEQ. Reactivation of this unit may require a permit.  
(9 VAC 5-80-1180 D.3)

*Note: The natural gas-fired heater with a maximum heat input of 11.9 million BTU per hour was removed from service as of December 9, 2008.*

Condition 4: The permittee shall meet all the applicable requirements of 40 CFR 60, Subpart GG Standards of Performance for Stationary Gas Turbines.  
(9 VAC 5-50-410)

Condition 5: Sulfur dioxide and particulate matter (PM) emissions from each combustion turbine shall be controlled by the use of pipeline quality natural gas fuel with maximum sulfur content not to exceed 0.8 percent by weight. The annual average sulfur content of the natural gas fuel shall not exceed 0.3 grains per 100 dry standard cubic feet, calculated monthly as the average of each consecutive 12 month period.  
(9 VAC 5-80-1180, 9 VAC 5-50-20, 9 VAC 5-50-260 and 9 VAC 5-50-410)

Condition 6: Nitrogen oxide (NO<sub>x</sub>) emissions from each combustion turbine shall be controlled by water injection. When natural gas is fired in a combustion turbine, water shall be injected into the combustion turbine to control nitrogen oxide emissions. The rate of water injection shall be at least that established during emissions tests as being sufficient to meet the emissions standards set forth in this permit.  
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

Condition 7: Carbon monoxide and volatile organic compound (VOC) emissions from each combustion turbine shall be controlled by a high temperature oxidation catalyst. The catalysts shall be operated within their optimum operating temperature range, and the catalyst material shall be tested periodically to predict and determine catalyst life for operation at this facility.

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

Condition 8: Carbon monoxide, VOC, PM and formaldehyde emissions from each combustion turbine shall be minimized by the use of good combustion practices.

(9 VAC 5-50-260)

Condition 10: The approved fuel for all of the combustion turbines is pipeline quality natural gas. A change in the fuel may require a permit to modify and operate.

(9 VAC 5-50-260)

Condition 11: The five Twin Pac generator sets shall consume no more than 4,679 million standard cubic feet (MMSCF) of natural gas per year, calculated daily as the sum of each consecutive 365-day period.

(9 VAC 5-170-160)

Condition 12: The fuel-bound nitrogen content of the natural gas to be burned in the turbines shall not exceed 0.015 percent by weight. The fuel-bound nitrogen shall be determined in accordance with 40 CFR Part 60, Subpart GG, Section 60.335(b)(9).

*Note: A custom fuel monitoring schedule was approved by the U.S. Environmental Protection Agency (EPA) in a letter to the permittee dated May 8, 2001. In accordance with the EPA-approved custom fuel monitoring schedule, monitoring of fuel nitrogen content shall not be required while natural gas is the only fuel fired in the gas turbines. Therefore, the fuel nitrogen monitoring provisions in Condition 12 are not included in the Title V permit. The EPA letter is attached to this Statement of Basis.*

Condition 15: Emissions from the operation of the ten (10) combustion turbines shall not exceed the limits specified below:

	(each at base/peak load)	(combined total)
	<u>lb/hr</u>	<u>tons/yr</u>
Particulate Matter	3.0	27.7
PM-10	3.0	27.7
Sulfur Dioxide	0.27	2.0
Nitrogen Oxides (25 ppmvd* for FBN # 0.015%) (as NO <sub>2</sub> )	29.6	249.0
Carbon Monoxide (25 ppmvd*)	18.0	151.6

	(each at base/peak load) <u>lb/hr</u>	(combined total) <u>tons/yr</u>
Volatile Organic Compounds	2.2	18.9

\*(ppm by volume, one hour average at 15% oxygen as a dry sample and at ambient pressure, as measured per EPA Methods 10 and 20 of 40 CFR 60 Appendix A)  
FBN – Fuel Bound Nitrogen, percent by weight

The approved methods for determining compliance with this condition include compliance with conditions 4 – 8, and 10 – 12; or DEQ-approved source emission tests. DEQ reserves the authority to require source emission tests for any regulated air pollutant.  
(9 VAC 5-50-260 and 9 VAC 5-50-410)

Condition 16: Emissions of nitrogen oxides from the operation of each combustion turbine shall not exceed 112.7 ppmvd as a one hour average at 15% oxygen, adjusted to International Standards Organization (ISO) standard ambient conditions in accordance with Subpart GG of the NSPS. The permittee shall provide hourly average records of the ambient temperature, ambient humidity, and combustor inlet pressure so that the NO<sub>x</sub> emissions data can be corrected to ISO standard ambient conditions, upon the request of the DEQ, in order to demonstrate compliance with this emission standard. The permittee shall expeditiously repair or replace ambient monitoring instrumentation in the event of instrument malfunction. In the event of malfunction, equivalent data may be provided from local meteorological sources.  
(9 VAC 5-170-160, 9 VAC 5-50-50, and 9 VAC 5-50-410)

Condition 17: Visible emissions from each combustion turbine exhaust stack shall not exceed ten (10) percent opacity as determined by EPA Method 9 (Reference 40 CFR 60, Appendix A). This condition applies at all times except during start-up, shut-down or malfunction.  
(9 VAC 5-50-260)

#### **Facility limitation requirements from 40 CFR 60 Subpart A:**

##### **40 CFR 60.11(a)**

(a) Compliance with standards in this part, other than opacity standards, shall be determined in accordance with performance tests established by §60.8, unless otherwise specified in the applicable standard.

##### **40 CFR 60.11(b)**

(b) Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Reference Method 9 in appendix A of this part, any alternative method that is approved by the Administrator, or as provided in paragraph (e)(5) of this section.

##### **40 CFR 60.11(c)**

(c) The opacity standards set forth in this part shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.

40 CFR 60.11(d)

(d) At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator who may include, but is not limited to, monitoring results, and opacity observations, review of operating and maintenance procedures, and inspection of the source.

40 CFR 60.12 Circumvention

No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission, which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

## Monitoring

The following monitoring requirements are applicable requirements from the state major NSR permit issued on August 27, 2001, and amended on September 18, 2006, and December 9, 2008. Condition numbers are from the NSR permit. The combustion turbines are subject to the provisions of NSPS Subpart GG. Applicable monitoring requirements from the subpart have been incorporated into the requirements from the state major NSR permit.

Condition 13: Continuous monitoring systems shall be installed and operated to monitor and record the fuel consumption and ratio of water injected to fuel being fired in each turbine. These monitoring systems shall be operated at all times that water is being injected into the turbines. The systems shall be maintained and calibrated in accordance with manufacturer's specifications. As a minimum, the monitoring systems shall be inspected at least annually thereafter by a professional engineer employed or retained by the permittee. The permittee shall maintain the records of fuel consumption and ratio of water to fuel being fired at the site. These records shall be kept on file for the most current five year period and available for inspection by DEQ personnel.  
(9 VAC 5-50-20, 9 VAC 5-50-40, 9 VAC 5-50-50, and 9 VAC 5-50-410)

Condition 18: The permittee shall monitor the sulfur content of the natural gas being fired in the combustion turbines, in accordance with Subpart GG of the NSPS and subsection a. below. The permittee shall comply with the Subpart GG sulfur content monitoring schedule monitoring schedule provisions (40 CFR 60.334(h)) until the permittee obtains EPA approval to conduct monitoring in accordance with the custom fuel sulfur monitoring schedule contained in subsections b. and c. of this condition. The permittee may submit subsequent custom fuel sampling schedules through the DEQ for EPA approval. The permittee shall maintain records certifying the sulfur content of the gas.

- a. Analysis for the sulfur content of the natural gas shall be conducted as referenced in 40 CFR 60.334(h)(1) and 40 CFR 60.335(b)(10), using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels or an approved alternative method. Fuel vendor analyses by these methods may be used.
- b. Sulfur monitoring shall be conducted twice monthly for twelve (12) months. If this monitoring demonstrates compliance with allowable permit limits, then sulfur monitoring shall be conducted once per month for six months.

*Note: Based on previous periods of monitoring demonstrating compliance at higher frequencies, the facility is not currently required to conduct sulfur monitoring at the frequencies indicated in Condition 18.b of the NSR permit. Condition 18 has been inserted into the Title V permit in a manner reflecting the facility's current quarterly monitoring frequency indicated in Condition 18.c.*

- c. If the monitoring required in paragraph b. above demonstrates consistent compliance with the fuel sulfur content allowable permit limits, sulfur monitoring shall be conducted once per quarter.
- d. Should any sulfur analysis required above indicate noncompliance, the permittee shall notify the Southwest Regional Office. Sulfur monitoring shall be conducted each day the turbines operate during the interim period prior to this initial schedule receiving EPA approval, or during an interim period when this custom schedule is being reexamined due to noncompliance, and those results may be submitted to show compliance.
- e. If there is a change in fuel supply, the permittee must notify the Director, Southwest Regional Office of such change for reexamination of this custom schedule. A change in fuel quality may be deemed a change in fuel supply. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being reexamined.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.

(9 VAC 5-170-160, 9 VAC 5-50-260 and 9 VAC 5-50-410)

The facility is a major source subject to Title V permitting and therefore subject to 40 CFR Part 64 – Compliance Assurance Monitoring (CAM). An emission unit is subject to CAM if it meets all of the following criteria on a pollutant-by-pollutant basis:

- a. Emits or has the potential to emit uncontrolled quantities of one or more regulated air pollutants at or above major source levels,
- b. Is subject to one or more emissions limitations for the regulated air pollutants for which it is major before control, and
- c. Uses an add-on control device to achieve compliance with the emissions limitations.

The combustion turbines are emission units that meet all the above criteria as follows:



- a. The combustion turbines emit uncontrolled quantities of NO<sub>x</sub> and CO above major source levels,
- b. The combustion turbines are each subject to NO<sub>x</sub> emission limits of 29.6 lb/hr and 25 ppmvd as contained in the NSR permit dated August 27, 2001 (as amended on September 18, 2006, and December 9, 2008), and are each subject to CO emission limits of 18.0 lb/hr and 25 ppmvd from the same permit.
- c. The combustion turbines use water injection to comply with the NO<sub>x</sub> emission limit, and oxidation catalysts to comply with the CO limit.

Because the combustion turbines meet the above criteria only when considering NO<sub>x</sub> and CO, CAM is required only for those pollutants. The applicant submitted CAM information as required by 40 CFR 64.5, Deadlines for Submittals.

The permittee has installed the following:

- a. A water flow meter for monitoring water injected into the turbines;
- b. A fuel flow meter for monitoring fuel consumption by the turbines; and
- c. A data acquisition system for recording values for water-to-fuel ratio, fuel consumption and turbine loading.

The permittee will be required to monitor, operate, calibrate and maintain the above-listed devices according to the CAM plan proposed by the applicant and summarized in the following tables:

<b>Applicable Requirement</b>	<b>NO<sub>x</sub> Limits</b>	<b>CO Limits</b>
Measurement Approach	Monitor fuel consumption and water-to-fuel ratio.	Monitor turbine load and verify catalyst activity.
Monitoring Methods and Location	Fuel consumption by fuel flow meter  Water-to-fuel ratio by fuel flow meter and water flow meter	Turbine instrumentation for load  Representative samples of catalyst for activity
Indicator Range	Water-to-fuel ratio as shown in the following table, and an excursion is defined as a water-to-fuel ratio in the indicator range.	Turbines to be operated at a minimum of 50 percent load, and an excursion is defined as a value less than 50 percent load.
Data Collection Frequency	Fuel consumption and water-to-fuel ratio data to be measured continuously.	Load data to be collected hourly. Catalysts from 2 of 10 units to be sampled annually
Averaging Period	Hourly for fuel consumption and water-to-fuel ratio	Three-hour periods for load data

Applicable Requirement	NO <sub>x</sub> Limits	CO Limits
Recordkeeping	Data acquisition system (DAS) stores hourly averages for water-to-fuel ratio and fuel consumption.	DAS records turbine load.  Reports of catalyst activity to be maintained for 5 years.
QA/QC Practices and Criteria	Fuel and water flow meters to be calibrated annually per manufacturer's recommendations.	Instrumentation for recording turbine loading to be calibrated annually per manufacturer's recommendations.

Indicator Ranges for Water-to-Fuel Ratio	
Load, percent	Water-to-Fuel Ratio Indicator Range
50	Less than 0.87
51-65	Greater than 0.87
66-80	Greater than 0.92
81-100	Greater than 0.98

The indicators to be monitored reflect the performance of the water injection for the combustion turbines, turbine loading and the performance of the oxidation catalysts. The range of operation for water-to-fuel ratio for the turbines is based on initial performance tests and manufacturer design. Performance test data was used to verify the accuracy of the water-to-fuel ratio and turbine loading indicator ranges so that ongoing compliance with the NO<sub>x</sub> and CO emission limits can be reasonably assured. Operation of the water injection controls, combustion turbines and oxidation catalysts in a manner that each indicator is maintained within the appropriate range will provide a reasonable assurance of compliance with the NO<sub>x</sub> and CO emission limits. The monitoring proposed in the Compliance Assurance Monitoring plan augments that required by 40 CFR Part 60, Subpart GG, Standards of Performance for Stationary Gas Turbines.

The operating permit will contain conditions requiring the permittee to conduct monitoring in accordance with 40 CFR 70.6(a)(3)(i) and 40 CFR 64.6(c).

The permittee will be required to visually observe each combustion turbine exhaust stack at least once each calendar week to determine the presence of visible emissions while operating (does not include condensed water vapor/steam). If during the observation, visible emissions are observed, a visible emission evaluation (VEE) shall be conducted on each affected unit in accordance with 40 CFR 60, Appendix A, EPA Method 9. The VEE shall be conducted for a minimum of six minutes. If any of the observations exceed 10 percent opacity, the VEE shall be conducted for a total of 60 minutes. A Method 9 VEE shall not be required if the visible emissions condition is corrected as expeditiously as possible such that no visible emissions exist; the emissions unit is operating at normal conditions; and, the cause and corrective

measures taken are recorded. A record of each visible emissions observation shall be maintained, including, at a minimum, the date, time, name of the emission unit, the applicable emission requirement, the results of the observation and the name of the observer. A record of each VEE shall be maintained and shall include, at a minimum, any data required by the 40 CFR 60, Appendix A, Method 9. This will satisfy the periodic monitoring requirement for the visible emission limitation included in the permit.

## Recordkeeping

The following recordkeeping requirements are applicable requirements from the state major NSR permit issued on August 27, 2001, and amended on September 18, 2006, and December 9, 2008. Condition numbers are from the NSR permit. The combustion turbines are subject to the provisions of NSPS Subpart GG. Applicable recordkeeping requirements from the subpart have been incorporated into the requirements from the state major NSR permit.

Condition 19: The permittee shall maintain records of all emission data and operating parameters for the Twin Pac gas turbines generator sets necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Southwest Regional Office. These records include, but are not limited to:

- a. The combined fuel consumption of the five Twin Pac generator sets, calculated daily as the sum of each consecutive 365-day period;
- b. An on-site parameter monitoring plan, or alternatively a quality-assurance plan in accordance with 40 CFR 60.334(g);
- c. All the fuel analysis reports for sulfur and nitrogen content in accordance with Conditions 12 and 18;

*Note: In accordance with the EPA-approved custom fuel monitoring schedule, monitoring of fuel nitrogen content shall not be required while natural gas is the only fuel fired in the gas turbines. Therefore, the recordkeeping provision pertaining to fuel analysis reports for nitrogen content in Condition 19.c is not included in the Title V permit.*

- d. Annual NO<sub>x</sub> emission reports, calculated daily as the sum of each consecutive 365-day period; and
- e. Continuous records of the ambient temperature, ambient humidity, and combustor inlet pressure.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent 5 years.

(9 VAC 5-50-50 and 9 VAC 5-50-410)

Condition 24: In order to minimize the duration and frequency of excess emissions due to malfunctions of process equipment or air pollution control equipment, the permittee shall:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance. These records shall be maintained on site for a period of 5 years and shall be made available to DEQ personnel upon request, and
  - b. Maintain an inventory of spare parts that are needed to minimize durations of air pollution control equipment breakdowns.
- (9 VAC 5-170-160, 9 VAC 5-50-20 E and 9 VAC 5-50-410)

Condition 25: The permittee shall have available written operating procedures for the related air pollution control equipment. Operators shall be trained in the proper operation of all such equipment and shall be familiar with the written operating procedures. These procedures shall be based on the manufacturer's recommendations, at minimum. The permittee shall maintain records of training provided, including names of trainees, date of training and nature of training.  
(9 VAC 5-170-160)

The Title V permit includes requirements for maintaining additional records of monitoring and testing required by the permit. These records include:

- a. Monitoring data, monitor performance data, monitor maintenance and corrective actions for the water flow meter; fuel flow meter and monitoring instrumentation for turbine loading;
- b. Results of the daily visual observations of the combustion turbine exhaust stacks and any visible emissions evaluations; and
- c. Any written Quality Improvement Plan and any activities undertaken to implement a Quality Improvement Plan, and any such data used to document the adequacy of monitoring.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent 5 years.

## Testing

The permit does not require source tests. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

The following condition is an applicable requirement from Condition 9 of the state major NSR permit issued on August 27, 2001, and amended on September 18, 2006, and December 9, 2008:

Condition 9: The permitted facility shall be constructed so as to allow for emissions testing and monitoring upon reasonable notice at any time, using appropriate methods. Test ports shall be provided at the appropriate locations.  
(9 VAC 5-50-30)

## Reporting

The following reporting requirements are applicable requirements from the state major NSR permit issued on August 27, 2001, and amended on September 18, 2006, and December 9, 2008. Condition numbers are from the NSR permit. The combustion turbines are subject to the provisions of NSPS Subpart GG. Applicable recordkeeping requirements from the subpart have been incorporated into the requirements from the state major NSR permit.

Condition 14: Quarterly reports of excess emissions shall be submitted to the Director, Southwest Regional Office in accordance with 40 CFR Part 60, Section 7(c). The report shall be postmarked by the 30<sup>th</sup> day following the end of the calendar quarter. In addition to the information required by 40 CFR Part 60, Section 7(c), each report shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions. For the purpose of this report, periods of excess emissions are defined as follows:

- a. Any one hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the average water-to-fuel ratio determined to demonstrate compliance with the nitrogen oxide ppmvd limits specified in condition 14 during the most recent compliance test.
- b. Any period during which the sulfur content of the natural gas being fired in the gas turbines exceeds 0.8 percent by weight.
- c. Any period during which the fuel-bound nitrogen content of the natural gas being fired in the gas turbines exceeds 0.015 percent by weight.

*Note: In accordance with the EPA-approved custom fuel monitoring schedule, monitoring of fuel nitrogen content shall not be required while natural gas is the only fuel fired in the gas turbines. Therefore, the reporting provision pertaining to fuel-bound nitrogen content in Condition 14 is not included in the Title V permit.*

- d. Operating hours when monitoring data is not available.  
(9 VAC 5-170-160, 9 VAC 5-50-20, 9 VAC 5-50-50 and 9 VAC 5-50-410)

In addition to the information included in the semi-annual monitoring report required by the Recordkeeping and Reporting section in the General Conditions of the Title V permit, the semi-annual monitoring report shall also include the following:

- a. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; and
- b. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable).  
(9 VAC 5-20-180 C and 9 VAC 5-50-50)

## **Phase II Acid Rain Program**

The Phase II Acid Rain Permit for this facility, issued pursuant to 9 VAC 5 Chapter 80, Part II, Article 3, *Acid Rain Operating Permits* (9 VAC 5-80-360 et seq), effective from January 1, 2006 through December 31, 2010, is incorporated by reference into the Title V permit. A copy of the acid rain permit is attached to the Title V permit.

The ten combustion turbines were not eligible for SO<sub>2</sub> allowance allocations by the U.S. EPA under Section 405 of the Clean Air Act and the Acid Rain Program. Therefore, these units have no SO<sub>2</sub> allowances listed in Table 2 of 40 CFR 73.10. SO<sub>2</sub> allowances may be acquired from other sources in addition to those allocated by the U.S. EPA. No revision to this permit is necessary in order for the owners and operators of these units to hold additional allowances recorded in accordance with 40 CFR Part 73. The owners and operators of each unit remain obligated to hold sufficient allowances to account for SO<sub>2</sub> emissions from each unit in accordance with 40 CFR 72.9(c)(1).

The ten combustion turbines are gas-fired and therefore not subject to NO<sub>x</sub> limitations under 40 CFR Part 76.

## **NO<sub>x</sub> Budget Trading Program**

Each of the ten combustion turbines meets the definition of a NO<sub>x</sub> Budget Unit and falls subject to the NO<sub>x</sub> Budget emission limitations under 9 VAC 5-140-40 or for opt-in sources 9 VAC 5-140-800. As required by 9 VAC 5-140-200 A, for each NO<sub>x</sub> Budget source required to have a federally enforceable permit, such permit will include the NO<sub>x</sub> Allowance Budget Trading permit to be administered by the permitting authority. The NO<sub>x</sub> Budget Trading permit will be administered by the VADEQ under the authority of 9 VAC 5-80-360 et seq., Article 3 and 9 VAC 5-140-10 et seq.

NO<sub>x</sub> emissions will be limited to below 100 tpy and less than 50 tons per NO<sub>x</sub> Control Period (May 1 to September 30). The approved fuel for the combustion turbines is natural gas.

## **Clean Air Interstate Rule (CAIR) Trading Program**

A review of the CAIR permit application submitted by Wolf Hills Energy indicates each of the ten combustion turbines is subject to the NO<sub>x</sub> Annual, SO<sub>2</sub>, and NO<sub>x</sub> Ozone Season CAIR programs. Therefore, the Title V permit will contain a condition requiring the permittee to comply with all applicable CAIR requirements (9 VAC 5-140-1010 et seq., 9 VAC 5-140-2010 et seq., 9 VAC 5-140-3010 et seq., 9 VAC 5-140-5010 et seq., and 40 CFR Part 96) by the compliance date in the respective Part of 9 VAC 5 Chapter 140. The CAIR permit and permit application will be included in the Title V permit as an attachment.

## **Streamlined Requirements**

There are no streamlined requirements.

## **GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. The acid rain operating permit regulations

subsume the Title V operating permit regulations for an acid rain facility. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

## **Comments on General Conditions**

### **B. Permit Expiration**

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §§2.1-20.01:2 and §§10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

### **F. Failure/Malfunction Reporting**

Section 9 VAC 5-20-180 requires malfunction and excesses emissions reporting within 4 hours. Section 9 VAC 5-80-650 also requires malfunction reporting; however, reporting is required within 2 days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to this section including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations and 9 VAC 5-80-650 is from the acid rain operating permit regulations. This facility is subject to both 9 VAC 5-20-180 and 9 VAC 5-80-650. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-650. The report must be made within 4 daytime business hours of the malfunction.

### **U. Malfunction as an Affirmative Defense**

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in section 9 VAC 5-80-650 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on General Condition F.

## **STATE-ONLY APPLICABLE REQUIREMENTS**

Wolf Hills Energy did not identify any state-only applicable requirements in their application; however, the following Virginia Administrative Codes have specific requirements only enforceable by the State:

- 9 VAC 5-50-310, Odorous Emissions
- 9 VAC 5-50-320, Toxic Pollutants

Therefore, Condition 29 of the state major NSR permit issued on August 27, 2001, and amended on September 18, 2006, and December 9, 2008, which limits formaldehyde emissions from the facility, has not been included in the Title V permit.

## **FUTURE APPLICABLE REQUIREMENTS**

Wolf Hills Energy did not identify any future applicable requirements in their application, and DEQ is unaware of any future requirements that may apply during the life of the Title V permit. Therefore, no future applicable requirements have been included in the permit.

## INAPPLICABLE REQUIREMENTS

The National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines does not apply since the facility is not a major source of hazardous air pollutants.

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A 4 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state, "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

## COMPLIANCE PLAN

Wolf Hills Energy is currently in compliance with all applicable requirements. No compliance plan was required in the application.

## INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-490.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup> (9 VAC)	Pollutant Emitted (5-80-720 B.)	Rated Capacity ( 5-80-720 C.)
WH01	Pratt & Whitney FT8 Twin Pac #1a	5-80-720 B.5.	Total HAPs	N/A
WH02	Pratt & Whitney FT8 Twin Pac #1b	5-80-720 B.5.	Total HAPs	N/A
WH03	Pratt & Whitney FT8 Twin Pac #2a	5-80-720 B.5.	Total HAPs	N/A
WH04	Pratt & Whitney FT8 Twin Pac #2b	5-80-720 B.5.	Total HAPs	N/A
WH05	Pratt & Whitney FT8 Twin Pac #3a	5-80-720 B.5.	Total HAPs	N/A
WH06	Pratt & Whitney FT8 Twin Pac #3b	5-80-720 B.5.	Total HAPs	N/A
WH07	Pratt & Whitney FT8 Twin Pac #4a	5-80-720 B.5.	Total HAPs	N/A
WH08	Pratt & Whitney FT8 Twin Pac #4b	5-80-720 B.5.	Total HAPs	N/A



Emission Unit No.	Emission Unit Description	Citation <sup>1</sup> (9 VAC)	Pollutant Emitted (5-80-720 B.)	Rated Capacity ( 5-80-720 C.)
WH09	Pratt & Whitney FT8 Twin Pac #5a	5-80-720 B.5.	Total HAPs	N/A
WH10	Pratt & Whitney FT8 Twin Pac #5b	5-80-720 B.5.	Total HAPs	N/A

<sup>1</sup>The citation criterion is 9 VAC 5-80-720 B - Insignificant due to emission levels.

## CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

## PUBLIC PARTICIPATION

A public notice regarding the draft permit was published in the June 3, 2009 edition of the *Bristol Herald Courier* newspaper in Bristol, Virginia. A copy of the draft permit and public notice were sent to the United States EPA by electronic mail on May 29, 2009. A copy of the public notice was sent by postal mail to the affected states, including West Virginia, Kentucky, North Carolina and Tennessee, on May 28, 2009. A copy of the public notice was sent to all persons on the Title IV and Title V mailing lists by electronic mail, facsimile or postal mail by June 3, 2009.

Public comments were accepted from June 4, 2009, through July 3, 2009. No comments were received from the public, the affected states or the EPA regarding the draft permit.